

PENDING CLAIMS

The claims are as follows:

1. (Previously Presented) A peptide comprising SEQ ID NO:8, SEQ ID NO:9, or SEQ ID NO:10, wherein the peptide can inhibit matrix metalloproteinase-2.

2. (Withdrawn) A composition comprising a therapeutically effective amount of peptide of formula I and a pharmaceutically acceptable carrier:



wherein

Xaa₁, Xaa₄, and Xaa₆ are separately each apolar amino acids;

Xaa₂ is a basic amino acid;

Xaa₃ is a cysteine-like amino acid;

Xaa₅ is a polar or aliphatic amino acid;

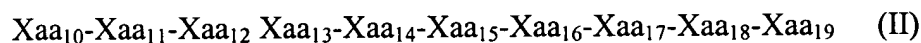
Xaa₇ is an acidic amino acid,

Xaa₈ is an aliphatic or polar amino acid;

Xaa₉ is an aliphatic, apolar or basic amino acid; and

wherein the peptide is capable of inhibiting the activity of a matrix metalloproteinase.

3. (Withdrawn) A composition comprising a therapeutically effective amount of peptide of formula II and a pharmaceutically acceptable carrier:



wherein

Xaa₁₀ is a polar, acidic, basic or apolar amino acid;

Xaa₁₁ is a polar or aromatic amino acid;

Xaa₁₂ is a polar, basic, aliphatic or apolar amino acid ;

Xaa₁₃ is an aromatic, aliphatic, polar or acidic amino acid;

Xaa₁₄ is an aromatic, apolar or polar amino acid;

Xaa₁₅ is an apolar or acidic amino acid;

Xaa₁₆ is a basic, a polar or an apolar amino acid;

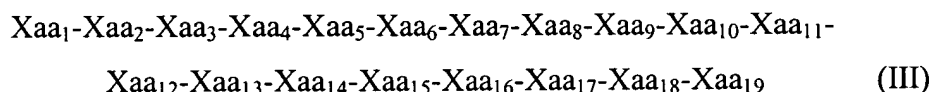
Xaa₁₇ is a basic, a polar, an aliphatic, an apolar or an acidic amino acid;

Xaa₁₈ is an apolar or an aliphatic amino acid;

Xaa₁₉ is a basic or an aliphatic amino acid; and

wherein the peptide is capable of inhibiting the activity of a matrix metalloproteinase.

4. (Withdrawn) A composition comprising a therapeutically effective amount of peptide of formula III and a pharmaceutically acceptable carrier:



wherein

Xaa₁, Xaa₄, and Xaa₆ are separately each apolar amino acids;

Xaa₂ is a basic amino acid;

Xaa₃ is a cysteine-like amino acid;

Xaa₅ is a polar or aliphatic amino acid;

Xaa₇ is an acidic amino acid;

Xaa₈ is an aliphatic or polar amino acid;

Xaa₉ is an aliphatic, apolar or basic amino acid;

Xaa₁₀ is a polar, acidic, basic or apolar amino acid;

Xaa₁₁ is a polar or aromatic amino acid;

Xaa₁₂ is a polar, basic, aliphatic or apolar amino acid;

Xaa₁₃ is an aromatic, aliphatic, polar or acidic amino acid;

Xaa₁₄ is an aromatic, apolar or polar amino acid;

Xaa₁₅ is an apolar or acidic amino acid;

Xaa₁₆ is a basic, a polar or an apolar amino acid;

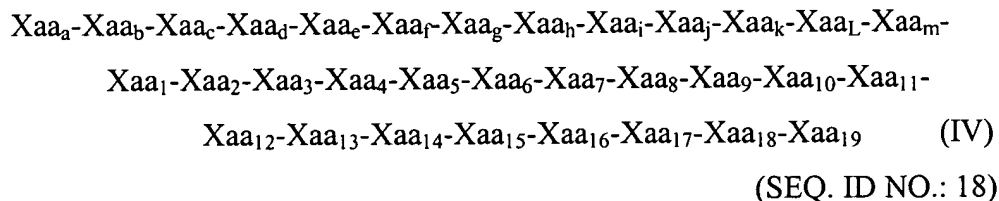
Xaa₁₇ is a basic, a polar, an aliphatic, an apolar or an acidic amino acid;

Xaa₁₈ is an apolar or an aliphatic amino acid;

Xaa₁₉ is a basic or an aliphatic amino acid; and

wherein the peptide is capable of inhibiting the activity of a matrix metalloproteinase.

5. (Withdrawn) A composition that comprises a therapeutically effective amount of peptide of formula IV and a pharmaceutically acceptable carrier:



wherein:

Xaa _a is proline;	Xaa ₁ is proline;
Xaa _b is glutamine or glutamic acid;	Xaa ₂ is arginine;
Xaa _c is threonine;	Xaa ₃ is cysteine;
Xaa _d is glycine;	Xaa ₄ is glycine;
Xaa _e is aspartic acid or glutamic acid;	Xaa ₅ is valine or asparagine;
Xaa _f is leucine;	Xaa ₆ is proline;
Xaa _g is aspartic acid;	Xaa ₇ is aspartic acid;
Xaa _h is glutamine or serine;	Xaa ₈ is valine or leucine;
Xaa _i is asparagine or alanine;	Xaa ₉ is alanine or glycine;
Xaa _j is threonine;	Xaa ₁₀ is asparagine or arginine;
Xaa _k is isoleucine or leucine;	Xaa ₁₁ is tyrosine or phenylalanine;
Xaa _L is glutamic acid or lysine;	Xaa ₁₂ is asparagine or glutamine;
Xaa _m is threonine or alanine;	Xaa ₁₃ is phenylalanine or threonine;
Xaa _n is methionine;	Xaa ₁₄ is phenylalanine;
Xaa _o is arginine;	Xaa ₁₅ is proline or glutamic acid;
Xaa _p is lysine or threonine;	Xaa ₁₆ is arginine or glycine;
Xaa ₁₇ is lysine or aspartic acid;	Xaa ₁₈ is proline or leucine;
Xaa ₁₉ is lysine; and	

wherein the peptide is capable of inhibiting the activity of a matrix metalloproteinase.

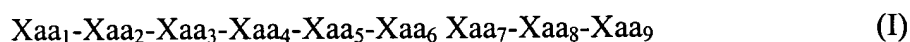
6. (Withdrawn) The composition of any one of claims 2-5, wherein an apolar amino acid is methionine, glycine or proline.
7. (Withdrawn) The composition of any one of claims 2-5, wherein a basic amino acid is histidine, lysine, arginine, 2,3-diaminopropionic acid, ornithine, homoarginine, ρ -aminophenylalanine, and 2,4-diaminobutyric acid.
8. (Withdrawn) The composition of any one of claims 2-5, wherein a cysteine-like amino acid is cysteine, homocysteine, penicillamine, or β -methyl cysteine.
9. (Withdrawn) The composition of any one of claims 2-5, wherein an aliphatic amino acid is alanine, valine, leucine, isoleucine, t-butylalanine, N-methylisoleucine, norleucine, N-methylvaline, cyclohexylalanine, β -alanine, N-methylglycine, or α -aminoisobutyric acid.
10. (Withdrawn) The composition of any one of claims 2-5, wherein an acidic amino acid is aspartic acid or glutamic acid.
11. (Withdrawn) The composition of any one of claims 2-5, wherein a polar amino acid is asparagine, glutamine, serine, threonine, tyrosine, citrulline, N-acetyl lysine, methionine sulfoxide, or homoserine, or an apolar amino acid such as methionine, glycine or proline.
12. (Withdrawn) The composition of any one of claims 2-5, wherein an aromatic amino acid is phenylalanine, tyrosine, tryptophan, phenylglycine, naphthylalanine, β -2-thienylalanine, 1,2,3,4-tetrahydro-isoquinoline-3-carboxylic acid, 4-chlorophenylalanine, 2-fluorophenylalanine, 3-fluorophenylalanine, 4-fluorophenylalanine, pyridylalanine, or 3-benzothieryl alanine.
13. (Withdrawn) The composition of any one of claims 2-5 wherein the matrix metalloproteinase is any one of matrix metalloproteinase-1, matrix metalloproteinase-2, matrix

metalloproteinase-3, matrix metalloproteinase-4, matrix metalloproteinase-4, matrix metalloproteinase-5, matrix metalloproteinase-6, matrix metalloproteinase-7, matrix metalloproteinase-8, and matrix metalloproteinase-9, matrix metalloproteinase-10, matrix metalloproteinase-11, matrix metalloproteinase-12, or matrix metalloproteinase-13.

14. (Previously Presented) A composition that comprises a therapeutically effective amount of peptide that comprises, SEQ ID NO:8, SEQ ID NO:9, or SEQ ID NO:10, and a pharmaceutically acceptable carrier.

15. (Previously Presented) The composition of claim 14 wherein the peptide can inhibit proteinase activity of any one of matrix metalloproteinase-1, matrix metalloproteinase-2, matrix metalloproteinase-3, matrix metalloproteinase-4, matrix metalloproteinase-5, matrix metalloproteinase-6, matrix metalloproteinase-7, matrix metalloproteinase-8, and matrix metalloproteinase-9, matrix metalloproteinase-10, matrix metalloproteinase-11, matrix metalloproteinase-12, or matrix metalloproteinase 13.

16. (Withdrawn) A wound dressing that comprises a peptide of the formula I:



wherein

Xaa₁, Xaa₄, and Xaa₆ are separately each apolar amino acids;

Xaa₂ is a basic amino acid;

Xaa₃ is a cysteine-like amino acid;

Xaa₅ is a polar or aliphatic amino acid;

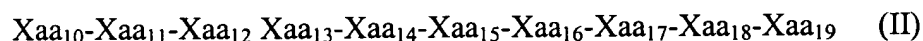
Xaa₇ is an acidic amino acid,

Xaa₈ is an aliphatic or polar amino acid;

Xaa₉ is an aliphatic, apolar or basic amino acid; and

wherein the peptide is capable of inhibiting the activity of a matrix metalloproteinase.

17. (Withdrawn) A wound dressing that comprises a peptide of the formula II:

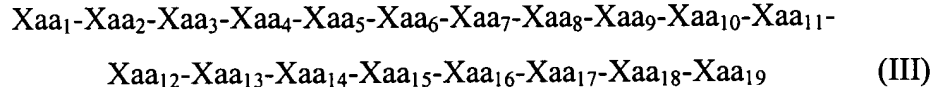


wherein

- Xaa₁₀ is a polar, acidic, basic or apolar amino acid;
- Xaa₁₁ is a polar or aromatic amino acid;
- Xaa₁₂ is a polar, basic, aliphatic or apolar amino acid ;
- Xaa₁₃ is an aromatic, aliphatic, polar or acidic amino acid;
- Xaa₁₄ is an aromatic, apolar or polar amino acid;
- Xaa₁₅ is an apolar or acidic amino acid;
- Xaa₁₆ is a basic, a polar or an apolar amino acid;
- Xaa₁₇ is a basic, a polar, an aliphatic, an apolar or an acidic amino acid;
- Xaa₁₈ is an apolar or an aliphatic amino acid;
- Xaa₁₉ is a basic or an aliphatic amino acid; and

wherein the peptide is capable of inhibiting the activity of a matrix metalloproteinase.

18. (Withdrawn) A wound dressing that comprises a peptide of formula III:



wherein

- Xaa₁, Xaa₄, and Xaa₆ are separately each apolar amino acids;
- Xaa₂ is a basic amino acid;
- Xaa₃ is a cysteine-like amino acid;
- Xaa₅ is a polar or aliphatic amino acid;
- Xaa₇ is an acidic amino acid;
- Xaa₈ is an aliphatic or polar amino acid;
- Xaa₉ is an aliphatic, apolar or basic amino acid;
- Xaa₁₀ is a polar, acidic, basic or apolar amino acid;
- Xaa₁₁ is a polar or aromatic amino acid;
- Xaa₁₂ is a polar, basic, aliphatic or apolar amino acid;
- Xaa₁₃ is an aromatic, aliphatic, polar or acidic amino acid;
- Xaa₁₄ is an aromatic, apolar or polar amino acid;
- Xaa₁₅ is an apolar or acidic amino acid;

Xaa₁₆ is a basic, a polar or an apolar amino acid;

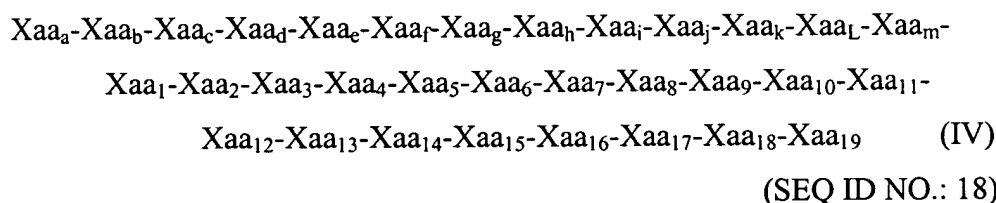
Xaa₁₇ is a basic, a polar, an aliphatic, an apolar or an acidic amino acid;

Xaa₁₈ is an apolar or an aliphatic amino acid;

Xaa₁₉ is a basic or an aliphatic amino acid; and

wherein the peptide is capable of inhibiting the activity of a matrix metalloproteinase.

19. (Withdrawn) A wound dressing that comprises a peptide of formula IV:



wherein:

Xaa _a is proline;	Xaa ₁ is proline;
Xaa _b is glutamine or glutamic acid;	Xaa ₂ is arginine;
Xaa _c is threonine;	Xaa ₃ is cysteine;
Xaa _d is glycine;	Xaa ₄ is glycine;
Xaa _e is aspartic acid or glutamic acid;	Xaa ₅ is valine or asparagine;
Xaa _f is leucine;	Xaa ₆ is proline;
Xaa _g is aspartic acid;	Xaa ₇ is aspartic acid;
Xaa _h is glutamine or serine;	Xaa ₈ is valine or leucine;
Xaa _i is asparagine or alanine;	Xaa ₉ is alanine or glycine;
Xaa _j is threonine;	Xaa ₁₀ is asparagine or arginine;
Xaa _k is isoleucine or leucine;	Xaa ₁₁ is tyrosine or
	phenylalanine;
Xaa _L is glutamic acid or lysine;	Xaa ₁₂ is asparagine or
	glutamine;
Xaa _m is threonine or alanine;	Xaa ₁₃ is phenylalanine or
	threonine;
Xaa _n is methionine;	Xaa ₁₄ is phenylalanine;

Xaa ₆ is arginine;	Xaa ₁₅ is proline or glutamic
acid;	
Xaa _p is lysine or threonine;	Xaa ₁₆ is arginine or glycine;
Xaa ₁₇ is lysine or aspartic acid;	Xaa ₁₈ is proline or leucine;
Xaa ₁₉ is lysine; and	

wherein the peptide is capable of inhibiting the activity of a matrix metalloproteinase.

20. (Withdrawn) The wound dressing of any one of claims 16-19 or 28, wherein an apolar amino acid is methionine, glycine or proline.

21. (Withdrawn) The wound dressing of any one of claims 16-19 or 28, wherein a basic amino acid is histidine, lysine, arginine, 2,3-diaminopropionic acid, ornithine, homoarginine, *p*-aminophenylalanine, and 2,4-diaminobutyric acid.

22. (Withdrawn) The wound dressing of any one of claims 16-19 or 28, wherein a cysteine-like amino acid is cysteine, homocysteine, penicillamine, or β -methyl cysteine.

23. (Withdrawn) The wound dressing of any one of claims 16-19 or 28, wherein an aliphatic amino acid is alanine, valine, leucine, isoleucine, t-butylalanine, t-butylalanine, N-methylisoleucine, norleucine, N-methylvaline, cyclohexylalanine, β -alanine, N-methylglycine, or α -aminoisobutyric acid.

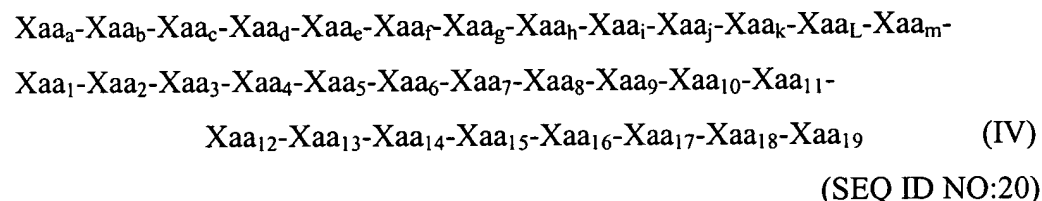
24. (Withdrawn) The wound dressing of any one of claims 16-19 or 28, wherein an acidic amino acid is aspartic acid or glutamic acid.

25. (Withdrawn) The wound dressing of any one of claims 16-19 or 28, wherein a polar amino acid is asparagine, glutamine, serine, threonine, tyrosine, citrulline, N-acetyl lysine, methionine sulfoxide, or homoserine, or an apolar amino acid such as methionine, glycine or proline.

26. (Withdrawn) The wound dressing of any one of claims 16-19 or 28, wherein an aromatic amino acid is phenylalanine, tyrosine, tryptophan, phenylglycine, naphthylalanine, β -2-thienylalanine, 1,2,3,4-tetrahydro-isoquinoline-3-carboxylic acid, 4-chlorophenylalanine, 2-fluorophenylalanine, 3-fluorophenylalanine, 4-fluorophenylalanine, pyridylalanine, or 3-benzothieryl alanine.

27. (Previously Presented) A wound dressing that comprises a peptide comprising SEQ ID NO:8, SEQ ID NO:9, or SEQ ID NO:10, wherein the peptide can inhibit a matrix metalloproteinase.

28. (Withdrawn) A composition that comprises a therapeutically effective amount of peptide of formula IV and a pharmaceutically acceptable carrier:



wherein:

Xaa₁, Xaa₄, and Xaa₆ are separately each apolar amino acids;

Xaa₂ is a basic amino acid;

Xaa₃ is a cysteine-like amino acid;

Xaa₅ is a polar or aliphatic amino acid;

Xaa₇ is an acidic amino acid,

Xaa₈ is an aliphatic or polar amino acid;

Xaa₉ is an aliphatic, apolar or basic amino acid; and

Xaa₁₀ is a polar, acidic, basic or apolar amino acid;

Xaa₁₁ is a polar or aromatic amino acid;

Xaa₁₂ is a polar, basic, aliphatic or apolar amino acid ;

Xaa₁₃ is an aromatic, aliphatic, polar or acidic amino acid;

Xaa₁₄ is an aromatic, apolar or polar amino acid;

Xaa₁₅ is an apolar or acidic amino acid;
Xaa₁₆ is a basic, a polar or an apolar amino acid;
Xaa₁₇ is a basic, a polar, an aliphatic, an apolar or an acidic amino acid;
Xaa₁₈ is an apolar or an aliphatic amino acid;
Xaa₁₉ is a basic or an aliphatic amino acid;
Xaa_a is proline;
Xaa_b is glutamine or glutamic acid;
Xaa_c is threonine;
Xaa_d is glycine;
Xaa_e is aspartic acid or glutamic acid;
Xaa_f is leucine;
Xaa_g is aspartic acid;
Xaa_h is glutamine or serine;
Xaa_i is asparagine or alanine;
Xaa_j is threonine;
Xaa_k is isoleucine or leucine;
Xaa_L is glutamic acid or lysine;
Xaa_m is threonine or alanine;
Xaa_n is methionine;
Xaa_o is arginine;
Xaa_p is lysine or threonine; and

wherein the peptide is capable of inhibiting the activity of a matrix metalloproteinase.